

SUBHAM SHOME

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RESEARCH INTEREST

Tomographic Imaging, Deep Learning, Radio Astronomy, Computer Vision, Applied Mathematics, Inverse Problems

EDUCATION

Pazmany Peter Catholic University (PPCU), Budapest, Hungary Sep 2022 - Jul 2024
Autonomous University of Madrid (UAM), Madrid, Spain
University of Bordeaux (UB), Bordeaux, France
Erasmus Mundus triple Master of Science in Image Processing and Computer Vision (IPCV)
Grade: **4.51/5**

Amity University Kolkata, India Aug 2015 - May 2019
Bachelor of Technology in Electronics and Communication Engineering
Grade: **9.26/10**

SKILLS AND EXPERTISE

Languages	Python, Matlab, C++, C, SQL
Libraries	Tensorflow, Keras, OpenCV, Scikit-learn, Pytorch, Scikit-image, Numpy, Pandas, Matplotlib
Tools	Git, L ^A T _E X

PROFESSIONAL EXPERIENCE

Master's Thesis Intern Jan 2024 - Jul 2024
IMS (Integration from Material to System) Laboratory *Bordeaux, France*

- Working on improvement of automatic parameter tuning for tomographic reconstruction of images using Bayesian stochastics and deterministic constraints.
- Understanding and performing mathematical basis of various integral transforms such as radon transform and projection slice theorem.

Machine Learning and Deep Learning Intern May - Jul 2018, Jan - Mar 2023
Indian Statistical Institute *Kolkata, India*

- Mastered foundational math for Support Vector Machines (SVMs), Random Forests, Logistic Regression. Developed automated system for retinal disease detection, achieving 86% accuracy, continued to bachelor's thesis.
- Applied gained expertise to more than 3 projects, showcasing hands-on experience in deep learning techniques, with a specific emphasis on CNNs.

Software Developer Jun 2019 - Aug 2022
Tata Consultancy Services Ltd (TCS) *Kolkata, India*

- Drove a 20% automation of Walmart's monitoring system, amplifying weekly team efficiency by over 30%.
- Designed and implemented 5% of the UI for Walmart Academy using React JS, and curbed bugs by 15% in 6 months within the ASDA.com production framework.

RESEARCH PROJECTS

Reconstruction of 3D images Jan 2024

- Performed multiple experiments on various medical images to perform reconstruction of 3D images using radon transform, depth maps and point clouds, achieving an error rate of 1%.

Multi-class Classification on Sloan Digital Sky Survey (SDSS) DR14 data Aug 2023

- Conducted a comparative analysis on SDSS DR14 dataset, achieving 99.4% and 99.1% accuracy using XGBoost and Random Forest ensemble techniques for multi-classifying galaxies, stars, and quasars.

ESA Hubble Dataset

Aug 2023

- Created a 3-class dataset (galaxies, nebulae, solar system) out of publicly available images from Hubble Space Telescope, sourced from the website of European Space Agency (ESA).

HONOURS AND AWARDS

- **Sponsorship - Synapse AI Symposium** Jun 2023
Selected among Synapse AI Symposium's top 50 candidates at Milan, alongside global AI luminaries.
- **Winner - Cybathlon 2024** Apr 2023
Secured Cybathlon 2023-24's Vision Assistance Challenge victory among 21 global teams at ETH Zurich.
- **Erasmus+ MSc: EU "living expenses" Scholarship** 2023-2024
Chosen along with 9 applicants to receive the prestigious Erasmus+ Grant as funding for studies in Europe.
- **Erasmus+ MSc: IPCV "fee waiver" Scholarship** 2022-2024
Granted full IPCV fee-waiver scholarship as one of only 3 non-EU citizens selected from more than 1000 applicants.
- **Silver Medalist in Academics, BTech** Oct 2019
Earned Silver Medal for B. Tech ECE with 9.26/10 GPA across 4 years.

CERTIFICATIONS

- **Deep Learning: From perceptrons to diffusion models** Mar 2023
Indian Statistical Institute, Kolkata
- **Mathematics for Machine Learning** May 2022
Imperial College of London
- **Computer Vision, Graphics and Image Processing** May 2018
Indian Statistical Institute, Kolkata

LANGUAGES

- **English**
IELTS - 8.0 (C1) Mar 2024
- **Bengali**
Native Language
- **Hindi**